

CLAIMS

What is claimed is:

1. A purified and isolated polynucleotide sequence encoding human protocadherin pc3.
2. A purified and isolated polynucleotide sequence encoding human protocadherin pc4.
3. A purified and isolated polynucleotide sequence encoding rat protocadherin pc5.
4. The polynucleotide sequence of claim 1, 2 or 3 which is a DNA sequence.
5. The DNA sequence of claim 4 which is a cDNA sequence.
6. The DNA sequence of claim 4 which is a genomic DNA sequence.
7. The DNA sequence of claim 4 which is wholly or partially chemically synthesized.
8. A polynucleotide sequence according to claim 1 comprising the human protocadherin pc3 encoding sequence of SEQ ID NO: 109.
9. A polynucleotide sequence according to claim 2 comprising the human protocadherin pc4 encoding sequence of SEQ ID NO: 111.

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10. A polynucleotide sequence according to claim 3 comprising the rat protocadherin pc5 encoding sequence of SEQ ID NO: 114.

11. A biologically functional DNA vector comprising a DNA sequence according to claim 4.

12. The vector of claim 11 wherein said DNA sequence is operatively linked to an expression control DNA sequence.

13. A host cell transformed or transfected with a DNA sequence according to claim 4 in a manner allowing the expression in said host cell of a protocadherin polypeptide.

14. A method for producing a protocadherin polypeptide comprising the steps of growing a host cell according to claim 13 in a suitable nutrient medium and isolating protocadherin polypeptide from said cell or from the medium of its growth.

15. Purified and isolated human protocadherin pc3 polypeptide.

16. Purified and isolated human protocadherin pc4 polypeptide.

17. Purified and isolated rat protocadherin pc5 polypeptide.

18. An antibody substance specific for human protocadherin pc3.

19. An antibody substance specific for human protocadherin pc4.

20. An antibody substance specific for rat protocadherin pc5.

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21. The antibody substance of claim 18, 19 or 20 which is a monoclonal antibody.

22. A hybridoma cell line producing a monoclonal antibody according to claim 21.

23. A method for modulating the binding activity of human protocadherin pc3 comprising contacting said protocadherin with an antibody substance according to claim 18 specific for said protocadherin.

24. A method for modulating the binding activity of human protocadherin pc3 comprising contacting said protocadherin with a peptide ligand of said protocadherin.

25. A method for modulating the binding activity of human protocadherin pc4 comprising contacting said protocadherin with an antibody substance according to claim 19 specific for said protocadherin.

26. A method for modulating the binding activity of human protocadherin pc4 comprising contacting said protocadherin with a peptide ligand of said protocadherin.

27. A method for modulating the binding activity of rat protocadherin pc5 comprising contacting said protocadherin with an antibody substance according to claim 20 specific for said protocadherin.

28. A method for modulating the binding activity of rat protocadherin pc5 comprising contacting said protocadherin with a peptide ligand of said protocadherin.

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